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Spruce budworm

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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

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January 10, 1949

To: R. L. Furniss, Entomologist, Portland, Oregon

From: C. F. Speers, Entomologist, New Haven, Conn.
(Thru R. C. Brown)

Subject: Spruce Budworm, Parasites of

The collections of hibernating larvae, mature larvae and pupae made in eastern Oregon in 1948 for parasites have been dissected. Enclosed please find a copy of this information as summarized in the station's last quarterly report for 1948.

C. F. Speers

FOURTH QUARTERLY REPORT FOR THE CALENDAR YEAR 1948

Station: New Haven, Conn.

Project: Forest Insects

R. C. Brown-Station Leader

Studies of the biological factors affecting the spruce budworm. (Dowden, Carolina).

Oregon:

Collections of hibernating larvae, mature larvae and pupae made in eastern Oregon by C. F. Speers last season, were preserved in alcohol for dissection in New Haven. This work is summarized in Table 3.

One of the principal reasons for making collections in Oregon was to find where large numbers of certain parasites might be obtained in 1949. Table 3 indicates that Catherine Creek should be an excellent area to collect budworms for Geromasia, and that results should be good whether collections are made on "True" or Douglas fir. Phytodietus appeared in collections only from Chapin Creek and in only small numbers there. Pupal collections were apparently made too early to determine parasitization by hymenopterous pupal parasites. Fifty pupae dissected from almost every collection point yielded only 3 hymenopterous parasites. Two post-season pupal collections yielded a few Hymenoptera. Only 1 and 2 Itoplectis obesus, though, were recovered, respectively, from collections of about 100 and 200 pupae made at Battle Mountain and Tollgate. A comparison of collections made on "True fir" and Douglas fir was of considerable interest. At some points there appears to have been considerable variation in parasitization of larvae collected on the different host plants, but when all collections are considered there seems little evidence to support this view. The variations that do occur are more likely the result of normal variations which appear when small samples are taken of large populations.

Table 3. Percentage Parasitization of Spruce Budworm in Eastern Oregon- 1948
(As determined from dissection)

| Area | Tree Species | Hibernating Larvae | | | Mature Larvae | | | | | Total Parasitism | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Apanteles | Glypta | Horogenes | Ceromasia | Madromyia | Omotoma | Aplomya | Phytodietus | Hibernating Larvae | Mature Larvae |
| Chapin Creek | True fir | 23 | 9 | | | 8 | | | | 32 | 8 |
| | Doug. fir | 17 | 3 | | 6 | 2 | 2 | | 4 | 20 | 14 |
| Fairview Loops | True fir | 11 | 8 | 1 | | 10 | 6 | | | 20 | 16 |
| | Doug. fir | 6 | 5 | | 2 | 34 | | | | 11 | 36 |
| Dale | True fir | No collection | | | 8 | | 16 | | | | 24 |
| | Doug. fir | 8 | 5 | | 6 | 8 | | | | 13 | 14 |
| Opal | True fir | 15 | 11 | | | 8 | 2 | | | 26 | 10 |
| | Doug. fir | 13 | 14 | 2 | | 10 | | 2 | | 29 | 12 |
| Battle Mt. | True fir | 11 | 16 | | 6 | 12 | | | | 27 | 18 |
| | Doug. fir | 8 | 5 | 4 | | 2 | | | | 17 | 2 |
| Tollgate [1]/ | True fir | 3 | 2 | 2 | 2 | | | | | 7 | 2 |
| | Doug. fir | 2 | 8 | 6 | 2 | 10 | 16 | | | 16 | 28 |
| Catherine Creek | True fir | No collection | | | 24 | | 6 | 4 | | | 34 |
| | Doug. fir | No collection | | | 36 | | 2 | | | | 38 |

[1]/ At Tollgate tree species were mixed in collections of hibernating larvae.